

by etching the silicon-oxide-film; and applying dry-etching to the exposed portion.

5. (New) An ejection device comprising:

a nozzle plate comprising a silicon substrate having a first surface and a second surface;

a first nozzle portion having a circular cross-section, the first nozzle portion formed on the first surface of the silicon substrate; and

a second nozzle portion having a circular cross-section, the second nozzle portion formed on the second surface of the silicon substrate, and communicating with the first nozzle portion;

wherein the circular cross-section of the first nozzle portion is smaller than the circular cross-section of the second nozzle portion, the first and second nozzle portions forming a nozzle having a cross-section smaller stepwise from a rear end toward a front end of the nozzle.

6. (New) An ejection device according to claim 5, wherein the first and second nozzle portions are formed by patterning a stepwise exposed portion on a resist film formed on the second surface of the silicon substrate and applying dry-etching by plasma discharge to the stepwise exposed portion.

7. (New) An ejection device according to claim 5, further comprising a recess formed on the first surface of the silicon substrate, the recess communicating with the first nozzle portion such that a front end of the nozzle is exposed to the recess.

8. (New) An ejection device according to claim 7, wherein the first and second nozzle portions are formed by applying dry-etching by plasma discharge to the second surface of the silicon substrate, and the recess is formed by applying wet-anisotropic-etching to the first surface of the silicon substrate.

9. (New) An ejection device according to claim 8, wherein the first and second nozzle portions are formed by patterning a stepwise exposed portion on a

resist film formed on the second surface of the silicon substrate and applying dry-etching by plasma discharge to the stepwise exposed portion.

10. (New) An ejection device comprising:

a nozzle plate comprising a silicon substrate having a first surface and a second surface;

a plurality of first nozzle portions each having a circular cross-section, each of the first nozzle portions formed in the silicon substrate;

a plurality of second nozzle portions each having a circular cross-section, each of the second nozzle portions formed on the second surface of the silicon substrate, and communicating with a corresponding first nozzle portion, the circular cross-section of each of the first nozzle portions being smaller than the circular cross-section of each of the second nozzle portions, the first and second nozzle portions forming nozzles each having a cross-section smaller stepwise from a rear end toward a front end of each nozzle; and

a recess formed on the first surface of the silicon substrate, the recess commonly communicating with the plurality of first nozzle portions such that the front end of each of the nozzles is exposed to the recess.

11. (New) An ejection device according to claim 10, wherein the plurality of first and second nozzle portions are formed by applying dry-etching by plasma discharge to the second surface of the silicon substrate, and the recess is formed by applying wet-anisotropic-etching to the first surface of the silicon substrate.

12. (New) An ejection device according to claim 11, wherein the plurality of first and second nozzle portions are formed by patterning a stepwise exposed portion on a resist film formed on the second surface of the silicon substrate and applying dry-etching by plasma discharge to the stepwise exposed portion.

13. (New) An inkjet head comprising:

a nozzle plate comprising a silicon substrate having a first surface and a second surface;

a first nozzle portion having a circular cross-section, the first nozzle portion formed on the first surface of the silicon substrate;

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a second nozzle portion having a circular cross-section, the second nozzle portion formed on the second surface of the silicon substrate, and communicating with the first nozzle portion;

a second substrate including an ink passage, the second substrate being bonded to the second surface of the silicon substrate such that the ink passage communicates with the second nozzle portion; and

wherein the circular cross-section of the first nozzle portion is smaller than the circular cross-section of the second nozzle portion, the first and second nozzle portions forming a nozzle having a cross-section smaller stepwise from a rear end toward a front end of the nozzle.

14. (New) An inkjet head according to claim 13, wherein the first and second nozzle portions are formed by patterning a stepwise exposed portion on a resist film formed on the second surface of the silicon substrate and applying dry-etching by plasma discharge to the stepwise exposed portion.

15. (New) An inkjet head according to claim 13, further comprising a recess formed on the first surface of the silicon substrate, the recess communicating with the first nozzle portions such that a front end of the nozzle is exposed to the recess.

16. (New) An inkjet head according to claim 15, wherein the first and second nozzle portions are formed by applying dry-etching by plasma discharge to the second surface of the silicon substrate, and the recess is formed by applying wet-anisotropic-etching to the first surface of the silicon substrate.

17. (New) An inkjet head according to claim 15, wherein the first and second nozzle portions are formed by patterning a stepwise exposed portion on a resist film formed on the second surface of the silicon substrate and applying dry-etching by plasma discharge to the stepwise exposed portion.

18. (New) An inkjet head comprising:

a nozzle plate comprising a silicon substrate having a first surface and a second surface;

a plurality of first nozzle portions each having a circular cross-section, each of the first nozzle portions formed in the silicon substrate;

a plurality of second nozzle portions each having a circular cross-section, each of the second nozzle portions formed on the second surface of the silicon substrate, and communicating with a corresponding first nozzle portion, the circular cross-section of each of the first nozzle portions being smaller than the circular cross-section of each of the second nozzle portions, the first and second nozzle portions forming nozzles each having a cross-section smaller stepwise from a rear end toward a front end of each nozzle;

a recess formed on the first surface of the silicon substrate, the recess commonly communicating with the plurality of first nozzle portions such that the front end of each of the nozzles is exposed to the recess; and

a second substrate including ink passages, the second substrate being bonded to the second surface of the silicon substrate such that each ink passage communicates with a rear end of a corresponding one of the nozzles.

19. (New) An inkjet head according to claim 18, wherein the first nozzle portions and the second nozzle portions are formed by applying dry-etching by plasma discharge to the second surface of the silicon substrate, and the recess is formed by applying wet-anisotropic-etching to the first surface of the silicon substrate.

20. (New) An inkjet head according to claim 19, wherein the first and second nozzle portions are formed by patterning a stepwise exposed portion on a resist film formed on the second surface of the silicon substrate and applying dry-etching by plasma discharge to the stepwise exposed portion.

21. (New) An inkjet head according to claim 18, further comprising;

a plurality of pressure generators each corresponding to an ink passage;

a plurality of terminal portions that each supply a control signal to a corresponding pressure generator; and

a through-hole formed on the silicon substrate that exposes the terminal portions.